IGAP FY 2012 IGAP SPECIAL PROJECT NARRATIVE
October 1, 2011 to September 30, 2012

PROJECT/BUDGET PERIOD: October 1, 2011 to September 30, 2012

COOK INLET SUBSISTENCE CONSUMPTION ASSESSMENT OF THE SELDOVIA, PORT GRAHAM, NANWALEK, AND TYONEK TRIBES OF COOK INLET, AK

Seldovia Village Tribe, IRA

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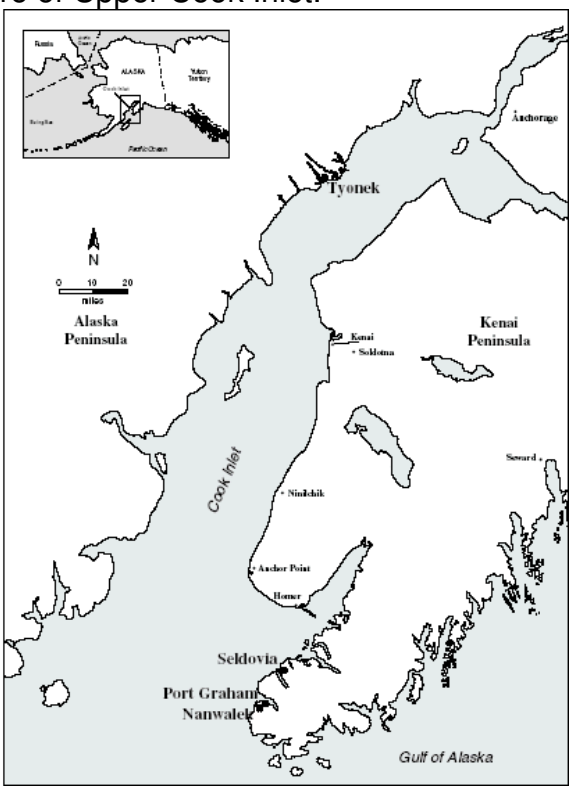
PROJECT SUMMARY:
The proposed project is to ascertain Cook Inlet tribal members' present consumption rates, patterns, habits, preparation and cooking methods of anadromous and resident fish species, as well as other subsistence resources, caught within Cook Inlet, AK. It is known that human health risks are posed by exposure to dioxins, heavy metals, and polychlorinated biphenyls (PCBs) through ingestion of contaminated fish and other subsistence foods, such as clams. Fish, though, is the main subsistence food consumed by Cook Inlet tribal members. Currently, the U.S. EPA uses an estimated national per capita fish consumption rate of 4.58 ± 0.42 grams/person/day for "as prepared" freshwater and estuarine finfish and shellfish and an estimated 6.30 ± 0.58 grams/person/day for "uncooked" freshwater and estuarine finfish and shellfish to establish human health based water quality criteria for toxins (USEPA 2002). However, a previous seafood and plant study (ATSDR 2009) conducted with data collected from 1993 through 2002 for Cook Inlet tribal villages (Port Graham, Nanwalek, Seldovia, and Tyonek) indicated that adult tribal members eat, on average, 7 oz or 198.44 grams of fish per day. The EPA recommended "safe" fish ingestion rate is only 32 grams per day (g/d). Unfortunately, when this study was conducted, contaminant testing and dietary consumption survey questions were not focused towards the traditional preparation, and cooking, methods of Cook Inlet tribes for fish (i.e. only raw, whole fish (including gut contents), skinless fish fillets, and halibut roasts were tested). Consumption of particular fish parts (skin, head, eggs, bones, and organs) was not evaluated nor how the frequency, and process, of particular fish cooking methods (fried, boiled, poached, baked, broiled, smoked, dried, raw, roasted, canned, etc.) or breastfeeding could influence exposure to contaminants. Fish preparation methods, as well as cooking methods, can greatly influence exposure to contaminants.

Given that this important information is unknown and that the daily rate of fish consumption for Cook Inlet tribal members was estimated to be dramatically higher than the national average estimated by EPA, the Seldovia Village Tribe (SVT) proposes to conduct a much more comprehensive study/assessment of fish consumption, and risk

of contaminant exposure through this consumption, for Alaska natives of the Cook Inlet area. This study would occur in two phases. The first phase (phase 1), which is what SVT is requesting funding for in this proposal, would be a very thorough consumption assessment of fish, as well as several other subsistence foods, of tribal members from the villages of Seldovia, Port Graham, Nanwalek, and Tyonek. The second phase would involve actual testing of contaminant levels in fish, as well as other subsistence foods, revealed to be consumed frequently and/or in large quantities by tribal members, caught within the waters of Cook Inlet. SVT will seek additional funding to carry out phase 2 of the study. The Seldovia Village Tribe has developed this narrative proposal under the statutory authority provided by the Indian Environmental General Assistance Program Act of 1992, and is consistent with EPA's 2006 – 2011 Strategic Plan under Goal 5, Compliance and Environmental Stewardship, Objective 5.3, Improve Human Health and the Environment in Indian Country.

PROJECT BACKGROUND:

The Alaska native villages (tribes) of Seldovia, Port Graham, Nanwalek, and Tyonek share the rich subsistence resources of Cook Inlet (chitons, fish, crab, shrimp, clams, mussels, octopus, sea birds and marine mammals (sea otters, seals, beluga)) and have relied on these resources for thousands of years. Cook Inlet is a large tidal estuary in south-central Alaska that connects to the Gulf of Alaska. It extends northeast from the Gulf of Alaska along the south-central Alaskan coast between the Kenai and Alaska Peninsulas. Cook Inlet is about 170 miles long. Seldovia, Port Graham, and Nanwalek are located along the southwest portion of the Kenai Peninsula while Tyonek is located along the northwest shore of Upper Cook Inlet.



On and offshore oil and gas activities occur within the upper portions of Cook Inlet. Since drilling operations began in the 1960s, offshore drilling for oil and gas in Cook Inlet has generated more than 978 million barrels of treated wastewater. While some of the Cook Inlet platforms separate and treat production fluids (oil, gas, and water) right at the platforms and then directly discharge the production water into Cook Inlet, others pipe production fluids to three shore-based facilities (Granite Point, Trading Bay, and East Foreland) for separation and treatment. Production water from these shore-based facilities is discharged to Cook Inlet following treatment (either directly from the on-shore facilities or from platforms). Contaminants are generated from these operations and enter Cook Inlet through the treated wastewaters and drilling mud. Chemicals found in treated wastewater and drilling mud include oil, grease, mercury, cadmium, barium sulfite, and chemical additives such as flocculants, oxygen scavengers, biocides, cleansers, and scale corrosion inhibitors. It is estimated that 253 tons of oil are discharged into Cook Inlet, alone, from treated wastewaters each year (MMS 2003). Additionally, Cook Inlet receives about an average of 182.3 thousand cubic meters per day of wastewater from 10 municipalities (MMS 2003). Tyonek is within 10 miles from the nearest oil and gas operations while Seldovia is approximately 117 miles away and Port Graham and Nanwalek are about 128 miles away (USEPA 2000, 2003).

Much concern exists over the risk posed to human health through exposure to these contaminants through the consumption of traditional subsistence foods. Traditional foods comprise 40 percent to 90 percent of rural Alaskan diets and therefore high levels of contaminants in these resources can be especially dangerous to Alaska natives (ATSDR 2009). One of the most important subsistence resources to tribal members in the Cook Inlet region is salmon. In a previous study, as part of an attempt to determine present contaminant levels in fish and other traditional foods, fish samples (whole fish, fish fillets, and halibut roasts) collected in 1997 and 2002 were analyzed for heavy metals (arsenic, cadmium, chromium, lead, nickel, selenium, and methyl mercury), pesticides, dioxins, and polychlorinated biphenyls (ATSDR 2009). However, data for whole fish and fish fillet samples were not used to assess chemical exposures from eating specific portions of fish, such as liver, kidney, organs, skin, heads, etc. A survey was also conducted by the Village of Port Graham to determine information about native food consumption. As mentioned in the Project Summary section of this proposal, the survey results indicated a much higher estimated daily fish ingestion rate for tribal members compared to the national rate used by the US EPA. The survey, though, did not collect information on fish consumption in elementary age and preschool children nor address such factors as fish preparation methods, cooking methods, or breastfeeding. PCBs tend to concentrate in the fatty portions of the fish as well as in the heads, skin, guts, liver, and eggs (roe). Baking, broiling, grilling, or steaming may reduce PCBs and other chemicals, compared to frying with breading and/or batter, since they allow the fats and juices to drain away from the fish. Cooking also helps to reduce the level of many chemical contaminants present in a fish compared to eating it raw. Furthermore, certain toxic contaminants can be passed to newborn infants from their mother's breast milk and so female respondents should be asked whether they have given birth, whether the child or children had been or are being breast fed, and at what age their child ceased or will cease breastfeeding.

Since fish species, especially salmon, are a vital part of the native diet for residents of Seldovia, Port Graham, Nanwalek, and Tyonek, SVT feels strongly that all these villages will benefit from the information obtained through a new subsistence consumption assessment which addresses the issues stated in this proposed narrative as well as to collect more consumption data on non-fish subsistence foods (information regarding snails, chitons, and octopus were collected in the Port Graham Survey). All these villages have a vested interest in this information since it directly relates to the health of their community members. Therefore, SVT is seeking special project funding to carry out the first phase of the proposed project (i.e. conduct an assessment). It is SVT's wish that collaboration between the tribes is strengthened during this process and that it is carried through into the second phase of the project (testing of contaminants in whole specimens and parts) when that occurs.

PROJECT GOALS AND OBJECTIVES:

We are looking to protect the health of tribal members within the Cook Inlet area by limiting exposure to contaminants, obtained through the consumption of fish and other traditionally consumed foods, through the collection and dissemination of accurate information concerning tribal members' subsistence consumption rates, habits, preparation and cooking methods. Tribal members will eventually use these data to determine "safe limits" for consumption of these resources. "Safe limits" for consumption will be ascertained based upon the above factors as well as age (children vs. adult) after levels of contaminants (dioxins, heavy metals, and PCBs) have been determined for whole specimens and parts prepared and cooked in different traditional ways. In this proposed study, SVT will:

- Increase collaboration between SVT and tribal environmental/EPA staff from the Cook Inlet villages of Port Graham, Nanwalek, and Tyonek
- Interview tribal members
- Obtain quantitative data on consumption by tribal members (i.e. amount consumed and how often) as it pertains to fish species, age of person interviewed, breast feeding, preparation method (whole fish and/or fish parts (head, fillet, skin, eggs, bones, organs)), cooking method (raw, dried, boiled, broiled, baked, roasted, pan fried, deep fried, smoked, poached, canned), special events/ceremonies, and where fish is obtained (locally or brought in from outside Cook Inlet)
- Obtain quantitative data on consumption by tribal members (i.e. amount consumed and how often) of non-fish subsistence resources such as clams, black leather chitons (bidarkis), limpets, blue mussels, octopus, harbor seal, and sea birds (including sea ducks).
- Determine average daily consumption rates (for children and adult tribal members) for fish and non-fish subsistence resources

PROJECT DESCRIPTION:

The proposed project and corresponding budget is for a period of 12 months (October 1, 2011 through September 30, 2012). The majority of the effort will be achieved with

SVT Environmental Department staff although there will be close collaboration with IGAP EPA/Environmental staff from the villages of Port Graham, Nanwalek, and Tyonek. SVT's Environmental Assistant will serve as the Project Manager (part-time; Approximately 20 hours per week) and will organize and coordinate all project activities (under the supervision of SVT's Environmental Coordinator). Project Manager will design the subsistence consumption assessment form in collaboration with environmental staff from the other villages. Assessment forms will address 24-hour dietary recall, seasonal, annual and daily fish consumption rates, consumption of fish parts, fish preparation methods, breast-feeding, sources of fish consumed and fish consumption as a result of cultural and other special events. Tribal members interviewed will be asked questions about their consumption of different species of fish as well as consumption of specific fish parts. Food models approximating different sizes of fish fillets will be utilized to obtain more accurate estimates of fish quantities consumed by respondents. Respondents will also be asked to provide information about consumption of fish species and fish parts for one child 17 years of age or less residing in the respondent's household (if applicable). Adult tribal members will also be asked about consumption of non-fish subsistence foods on a yearly basis, such as how frequently they are eaten and in what amount. Interviews will be conducted in person at a designated location within each village at arranged times. For Seldovia, this will most likely be within the boardroom of the administration building. Only persons who are tribal members and who primarily reside within the villages will be interviewed. Due to differences in the population sizes of the tribes, an equal number of interviews will be sought from each tribe. This number will be determined after consulting with the other village EPA/Environmental staff. Data for the assessment will most likely be collected following a stratified sampling design with each tribe representing an individual stratum or "subpopulation" although final sampling methods will be determined upon consensus from project partners and consistent with EPA approved QAPP. While data for individual tribes will not be weighted, pooled data will be according to the proportion of each subpopulation (i.e. tribe) sampled.

Project Manager will arrange and lead initial meetings, in which she will meet with project partners, in Q1 to discuss the project and develop the assessment questionnaire form. The meetings will be held in each of the four communities at their environmental offices or at a tribal council meeting. Assessment questionnaire forms will be fully developed, and approved by all project partners, by the end of Q1. In Q3, Project Manager and Environmental Coordinator will travel to each village and will train each interviewer in proper interviewing techniques and to insure uniformity in methodology. In Q3, interviews will be conducted in each village under the supervision of the project manager and the environmental coordinator. All completed assessment questionnaires will be given to Project Manager who will then enter the information into an Excel database, summarize findings, and write a final report between Q3 and Q4. To protect confidentiality, information revealing participant identity will not be entered into the database (assigned numbers will be used instead) nor will the identity of any participants be shown in the final report. Confidentiality agreements will be signed by all project partners stating that none of the information provided in the database or the assessment will be revealed before release of the final report. In Q4, copies of the final

report and an one-page success story will be shared with project partners. A teleconference will be also held in SVT's boardroom to present findings to project partners via *GoToMeeting* or something similar. Throughout the entire project, frequent communication will be maintained with all project partners, by phone and/or e-mail, to insure project progress and continuity.

PROJECT TASKS:

- SVT's environmental coordinator designates SVT's environmental assistant as Project Manager

- Introduce project to partner tribes

- Travel to each village to meet with tribal administration and environmental staff

- Develop FY13 workplan for 2nd phase of project

- Develop and finalize subsistence consumption assessment form and database

- Develop QAPP

- Develop training materials, interviewer guides, and standard forms

- SVT's environmental assistant/project manager and environmental coordinator travel to each village to assist with subsistence consumption assessment interviews

- Collect, store, and analyze assessment data

- Generate Final Summary Report and one-page success story

MANAGEMENT AND FINANCIAL CAPABILITIES:
Seldovia Village Tribe (SVT) is a federally recognized Tribe located in Seldovia, Alaska. SVT is currently in our 11th year of developing and operating our EPA Tribal Environmental Program. The Environmental Coordinator goes to trainings and meetings to further his education and improve upon our program. The Environmental Coordinator works with other Tribes and government entities to increase our management capabilities to eventual self-governance.

The Seldovia Village Tribal Council provides overall vision and guidance for SVT's environmental assessment activities with assistance and input from local traditional knowledge experts and elders. The SVT council assists project staff in making decisions that will best address the Tribe's priority environmental and natural resource issues and concerns. SVT's President/CEO will oversee all project operations and will be responsible for ensuring that outcomes are produced and that project quality is maintained.

Responsibility for managing the scope of work and reporting is that of the Environmental Coordinator, Michael Opheim. SVT's Environmental Assistant, Tracie Merrill, (proposed Project Manager) will report to the Environmental Coordinator, and both will provide monthly reports to the President/CEO, who in turn, reports to the Tribal Council. SVT's key personnel are both professional and experienced in their respective fields. Their range of qualifications, skills and experience, combined with their good standing in the community, constitute a valuable team for management and administration of this project.

- Crystal Collier, President/Chief Executive Officer (CEO)
  Ms. Collier has been the President/CEO of SVT for over 25 years. She is a lifelong Alaskan and attended the University of Alaska Anchorage. Ms. Collier will oversee project development, coordinate activities within the Tribe and the community, oversee grant administration, supervise the Environmental Coordinator, and monitor project achievement according to all requirements and proposed milestones. Ms. Collier's full resume is included in Attachment 4.

  Michael Opheim, Environmental Coordinator
  Since 2003, Mr. Opheim has held the position of Environmental Coordinator for SVT. He manages the office and ensures that grants are properly administered. He works with the Tribe President/CEO, Tribal Council, and the EPA Project Officer for the IGAP program. SVT has several other grants that the Environmental Office oversees and Mr. Opheim works very closely with funding organizations to make sure that all grant deadlines and objectives are met. Mr. Opheim oversees a staff that varies in size by season and by grants active. He has a background in both the environmental and construction industries, and is a life-long resident of the Village of Seldovia.

  Mr. Opheim will collaborate with the Project Manager to oversee and assist with successfully completing all assessment objectives. Mr. Opheim is responsible for technical oversight, sampling, analytical procedures, QA requirements, problem resolution and general project implementation. All sampling personnel and project team members will be thoroughly instructed in the specific procedures, methods and quality assurance guidelines prior to conducting the assessment. Mr. Opheim's full resume is included in Attachment 4.

- TRACIE MERRILL, ENVIRONMENTAL ASSISTANT (PROPOSED PROJECT MANAGER) – 1 PTE

  Ms. Merrill will work directly under the supervision of Mr. Opheim and will be responsible for general project implementation and meeting all reporting requirements. Ms. Merrill will also plan and coordinate all project activities. SVT's Environmental Assistant will work under the direction and oversight of Mr. Opheim.

The Environmental Coordinator continues to work with the Finance Department and the Council to enhance the Tribes capability to manage federal and non-federal grants and

programs. Seldovia Village Tribe has yearly annual audits and has had no findings noted. The Tribe has many other grants that help the Tribal members and the community as a whole. Some of these programs include, elderly and low-income housing, low income food bank, counseling for drug and alcohol, after school programs for the kids, EMS/Fire dept., Community health programs in Seldovia and the SVT Health Clinic based in Homer, Anchor Point and Seldovia. The Tribe administers federal grants and contracts, which are generally of a cost-reimbursement type. Grants and contracts include provisions for advances and billings for costs on a reimbursable basis. Revenues and receivables are generally recorded when reimbursable expenses are incurred to the extent of the grant or contract amount. Indirect expenses, which benefit all programs, are allocated to the various funds by contractual agreement. Each program has negotiated an administrative or indirect cost budget, and costs approved by each agency are allocated to the appropriate fund according to these budgets. In our program we hope to continue and grow and be beneficial to our Tribe and its members for generations to come by being able to be proactive on the diminishing resources, through identification of problems, collaborating with agencies to assist us, and developing ways to stop some of the depletion. The SVT has had one onsite audit that went well, there were 2 findings. One of the findings was that SVT had no written policies or procedures and the second finding was on a purchase that was easily rectified. The work on the policies and procedures book still is on going. SVT under the Environmental Office has currently six grants. These grants are from EPA, BIA, and the USFWS. The Tribe has 3 grants from EPA starting with the EPA IGAP grant and two EPA Network Node grants. SVT also has grants from BIA for clam and bull kelp research and for a Marine Science Workshop and a Tribal Wildlife Grant from USFWS. The SVT has quarterly and semi annual reports as well as annual reports for all of the grants that we currently oversee. We are currently up to date with all grants reporting and turning in outputs to these grants.

ACCOMPLISHMENTS:

We applied for and received a Tribal Hazardous Waste Management Grant in 2005. This allowed us to develop our SVT Hazardous Waste Management Plan and implement a Green Star program. We have been successful in receiving three Environmental Information Exchange Network grants from EPA, which made us the first Tribe on the Kenai Peninsula to be a hub for scientific exchange. Our Environmental Coordinator is providing general oversight of the Network Node Project Coordinator. SVT has also been successful in receiving several grants from BIA to help construct our museum and visitor center displays as well as a clam and bull kelp project.

We are currently approaching our eleventh year of developing and operating our Tribal Environmental Program. The program for FY ’11 continued working on the identification of priority Tribal natural resource issues; improved proficiency in our environmental and natural resource program; and provided supervision for our Network Node Project, museum, Silver Salmon Restoration project and several smaller grants that we have received.

For FY ’11, we will conduct an assessment of Tribal Members to determine the amount, and frequency, of subsistence resources consumed on a monthly basis, continuing working to support the removal of invasive plant species, continue to seek funding for air quality monitoring and to assess and clean up local industrial sites contaminated with hazardous wastes, improve upon our study plan for future sampling plans; administer the Tribal Environmental and Natural Resource Management Plans developed under our FY ’03 and FY ’04 grants; and continue our Network Node and Silver Salmon Restoration projects.

To achieve these Components our Environmental Coordinator will insure that these tasks are accomplished within the budgetary and time guidelines listed below. Our Environmental and Natural Resource Management Plans are continually being improved upon with guidance from our Council, with a view to our traditional resource uses and values. Planning for Tribal and public environmental and natural resource education is continuing with collaborative partnerships with the Center for Alaska Coastal Studies, Kachemak Bay Research Reserve, The Alaska Sea Otter and Steller Sea Lion Commission, National Oceanic and Atmospheric Administration, and other educational institutions, agencies and organizations.

REFERENCES:

(ATSDR) Agency for Toxic Substances and Disease Registry 2009. Evaluation of seafood and plant data collected from Cook Inlet near the native villages of Port Graham, Nanwalek, Seldovia, and Tyonek, Alaska. US Department of Health and Human Services, Atlanta, GA. July 2009.

(MMS) Mineral Management Service Alaska OCS Region. 2003. Final environmental impact statement: Cook Inlet planning area oil and gas lease sales 191 and 199. US Department of the Interior. Available at http://www.mms.gov/Alaska/ref/AKPUBS.HTM. Last accessed 23 June 2005.

(USEPA) US Environmental Protection Agency. 2000. Human health risk assessment of chemical contaminants in seafood from Cook Inlet, Alaska (Draft Report, Version 2), Washington DC, VA. September 2000.

(USEPA) US Environmental Protection Agency. 2002. Estimated per capita fish consumption in the United States. EPA-821-C-02-003, Washington DC, VA. August 2002

(USEPA) US Environmental Protection Agency. 2003. Survey of chemical contaminants in fish, invertebrates, and plants collected in the vicinity of Tyonek, Seldovia, Port Graham, and Nanwalek-Cook Inlet, AK. EPA-910-R-01-003. Seattle, WA. August 2003 (revised version released December 2003).